

Chapter 1

Introduction

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This report presents the main findings of the IMAROM project (Interaction between Migration, Land and Water Management and Resource Exploitation in the Oases of the Maghreb). IMAROM is an interdisciplinary, EC-funded research project studying the impact of migration and concomitant socio-economic and political changes on land and water management and resource exploitation in the oases of Morocco and Tunisia. In addition to identifying the enabling socio-economic and biophysical conditions for investments in irrigated oasis agriculture, IMAROM seeks to assess the ecological consequences of current changes in land and water management of oases. This is important, as increasing pressure on water resources as well as poor irrigation management might endanger the future sustainability of oasis agriculture in the Maghreb. This research has been achieved via systematic research by comparing socio-economic, agricultural, and environmental developments in several oases located in southern Morocco and Tunisia.

The IMAROM project was initiated and co-ordinated by Leo de Haan and Hein de Haas of the University of Amsterdam (Netherlands). The project proposal was approved for funding by the INCO-DC programme of DGXII of the European Commission in 1997 (contract number IC18-CT97-0134). The project was conducted over a three-year period, from 1 March 1998 to 1 March 2001. Four other institutions participated in the IMAROM consortium in addition to the University of Amsterdam. In Morocco, participating institutions included the Mohammed V University (Rabat, research coordinator Abdellatif Bencherida) and the Mohammed I University (Oujda, research coordinator Abderrahmane El Harradji); in Tunisia the Institut des Régions Arides (Médenine, research coordinators Youssef Moumni and Mongi Sghaier); and in Spain the Estación Experimental de Zonas Aridas (Almería, research coordinator Albert Solé-Benet). Together, the IMAROM project partners comprise a multidisciplinary research consortium, providing input from the social as well as the natural sciences.

Recent changes in agriculture, heralded by the rise of modern types of agriculture and a partial decline in traditional forms of oasis agriculture, cannot be understood in isolation from the fundamental socio-economic and political changes that oases have witnessed throughout the 20th century. The political integration of oases into the structure of modern nation-states, as well as national and international capitalist-economic contexts and the concomitant demise of traditional economic and socio-ethnic relations, have provoked a reorientation of peasant households from an almost complete dependence on subsistence agriculture towards a diversification of activities, in which non-agricultural cash income plays an increasing role. It is international migration in particular which has dramatically increased the income of most oasis households, and which has decreased dependence on agriculture, thus enabling the growing diversification of economic activities of oasis households. The availability of cash income originating from migrant remittances and other non-agricultural income has dramatically increased the freedom of migrant and other wealthy households regarding available choices for certain economic activities and investments.

A key insight emanating from the literature on the impacts of migration is that migration remittances potentially enable investments in their areas of origin, but do not

determine the nature of developments and the subsequent direction of changes. After all, migration can potentially lead to a total withdrawal from local economic activities at one extreme, while leading on the other to large investments in a broad portfolio of local economic activities, with manifold options located between these extremes. Second, if investments are attempted, they can be achieved in various sectors ranging from industrial activities to retail, transport and agriculture, including even education. Whether and to what extent migration-induced investments occur, and to what economic sectors they are allocated, depends on the specific political, economic, social, cultural and environmental context in which investment decisions are made. These very conditions shape the eventual size and nature of investments.

Consequently, the decades-old debate within the scientific literature on whether the impact of migration in regions of origin is deemed positive or negative is rather obsolete in fact, as it has become increasingly clear that actual development responses are highly contextual. This means that we cannot generalise on this matter without bearing in mind intervening contextual variables shaping the specific local investment environment, which eventually determine the scope of localised migration impacts. As these variables demonstrate high spatial variability, migration impacts are highly differentiated across locales.

The fundamental context-sensitivity of development responses to migration is particularly acute for agricultural development, as it depends not only on socio-economic and political variables but also on several environmental variables, including climate, land and the availability of water resources. Moreover, agricultural investments are generally considered high-risk compared to investments in the construction of houses, transport, coffee-houses, and the retail sector. This is particularly true for desert agriculture, where water scarcity and harsh climate are particular risk factors.

Recent insights culled from the literature documenting migration impacts on agricultural development in the oases of the Maghreb confirm the hypotheses deduced from the general migration impact literature, namely that migration impacts reveal a high degree of spatial differentiation. In other words, migration, in particular via remittances, has the potential to contribute to agricultural development, but this potential is not always fully or even partially achieved. It is by interrogating the circumstances in which these investments take place – as well as the circumstances where they apparently do not – that is crucial for acquiring a better insight into the enabling conditions for such positive migration-development linkages.

A major research problem is that there is only scattered knowledge relating to the nature of agricultural transformations within the oases of the Maghreb. Likewise, the literature of migration impacts on oasis agriculture is purely descriptive, mono-disciplinary, non-quantitative and in most instances lacks any link to theory. Systematic insights into the interaction between migration and the concomitant socio-economic and political changes on the one hand, and agricultural change on the other, are largely absent.

In order to fill some of the lacunae in the generalised knowledge on the links between migration and transforming oasis systems, the first objective of the IMAROM research project is to deepen an understanding of the conditions which impinge on the investment of migration remittances in agricultural transformations. Within this first general objective, three research questions are distinguished. The first question relates migration impacts as such. To what extent is there a migration impact, that is, to what degree do migrant households behave differently from non-migrants households, and to what extent are they more inclined to invest in agriculture? In order to answer this question, the research has been

framed in such a way that migrant as well as non-migrant household behavior is subject to comparative scrutiny.

The second question relates to the nature of agricultural changes, which also seems highly differentiated across and within oases. What can explain this differentiation? What are the socio-economic, political and environmental circumstances under which the potentially enabling role of migrant remittances as investment capital are realised? Comparison of migration impacts on agricultural and natural resource use between various oases in two different Maghreb countries (Morocco and Tunisia) seemed to constitute a core pivot of analysis.

In addition to gaining a better understanding of the interaction between migration and agricultural transformation, the IMAROM project sought to study the impact of these agricultural changes on land and water management and resource use. This question could not be neglected, as water resources are generally very limited in the arid realms of Tunisia and Morocco, and current developments may endanger the current or future sustainability of oasis agriculture. The aforementioned agricultural transformations often coincide with the increased pumping of groundwater, which might lead to falling water tables and, hence, increasing costs of exploitation. Moreover, pumping may, through various mechanisms, lead to deteriorations in the chemical quality of the water, which may in turn affect the quality of land resources (e.g. sodification, salinisation). Poor irrigation management, waterlogging and a lack of drainage might also cause and aggravate land degradation problems.

The nature of ecological impacts resulting from changes in land and water management and resource exploitation, and their possible consequences, formed the second main object of study of the IMAROM research project. The biophysical environment of the respective research oases was evaluated in order to assess the quality and quantity of land and water resources, as well as to detect possible signs of degradation. This led to an assessment of the environmental effects of changing land and water management, as well as identification of realistic strategies which might lead to a more efficient use of resources and an increased sustainability of desert agriculture.

As a third general objective, the project aimed at integrating an analysis of the conditions which shape the impact of migration on agricultural change within oases of the Maghreb on the one hand, and an analysis of the ecological impact of such agricultural change on the other. In turn, researchers attempted to fuse these two approaches into one conceptual model aimed at comprehending and analysing the natural mechanisms linking the relevant variables. In evaluating hypotheses derived from the conceptual model, comparing analysis from the various oases studied in Morocco and Tunisia while adhering to similar research protocols, the project sought to contribute theoretical insights into the enabling conditions (i.e. contextual variables which shape a favourable investment environment) for investments in oasis agriculture. Second, the analysis strives to enable an assessment of the degree to which current agricultural transformations are sustainable, and how sustainability can be improved. From these insights, a number of recommendations are derived pertaining to measures which might contribute to creating a favourable environment for investment in oasis agriculture, while retaining its sustainability.

The present document is an account of research and data analysis carried out by the IMAROM research partners. Chapter 2 is dedicated to the elaboration of a theoretical framework on migration, agricultural development and resource exploitation in the oases of the Maghreb. Based on insights from recent literature, a conceptual model is defined in chapter 3, as is a set of tangible hypotheses based on this conceptual model. Chapter 4 describes the way in which the research was divided into five different sub-studies (work packages), allocated to different research partners, including the methodologies that were applied for data collection in the selected research oases. Chapters 5-11 contain the analysis

of data collected in the field, each chapter representing the research conducted by one of the partners¹. In chapter 12, data from all the work packages, as well as analyses of the preceding chapters, will be re-integrated and used for evaluating the hypotheses developed in chapter 3. Finally, this will lead to the formulation of recommendations in chapter 13.

¹ A more detailed account of research results can be found in the various IMAROM working papers (for a full list see annex of this report). Copies of IMAROM working papers are available by request from the project coordinators.